

# 150W ITE POWER SUPPLIES

## DESCRIPTION

This AC-DC switching power supplies in a package of 3 x 5 inches is a Class-I PSU and no load power consumption less than 0.21W. This PSU is capable of delivering 150 watts continuous power at 7 CFM forced air cooling or 100 watts continuous power at convection cooling and 50°C operation temperature. Product is suitable for display, information, and networking application.

## FEATURES

- Class-I design
- Design to meet IEC 60950-1 and IEC 62368-1 safety standard
- Low profile 3x5x1.126 inches
- No load power consumption less than 0.21W
- EN 55032 Class B radiated emission
- High altitude 5000 meters operation
- OTP, Brown out protection
- 12V fan driver

## INPUT SPECIFICATIONS

Input voltage: 90-264 VAC  
 Input frequency: 47-63 Hz  
 Input current: 1.5 A (rms) for 115 VAC  
 0.75 A (rms) for 230 VAC  
 No load power consumption  $\leq 0.21W$   
 Earth leakage current: 0.75 mA max. @ 264 VAC, 63 Hz  
 Touch current: 0.25 mA max. @ 264 VAC, 63 Hz

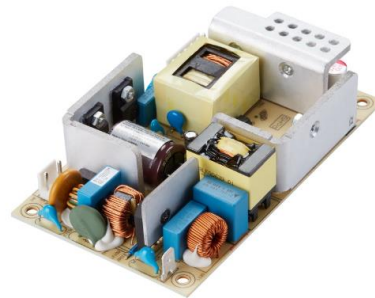
## OUTPUT SPECIFICATIONS

Output voltage/current: See rating chart.  
 Fan driver: Non-regulated 12V @ 500 mA max.  
 Total output power: 150W  
 Protection:  
 Over voltage: Set at 110~122% of nominal output voltage. Latch off  
 Short circuit & Over current: Output protected to short circuit condition and auto recovery  
 Over temperature: Detected by thermistor and latch off  
 Brown-out: Set at 75VAC  
 Temperature coefficient: All outputs  $\pm 0.04\%$  /°C maximum  
 Transient response: Maximum excursion of 4% or better on all models, recovering to 1% of final value within 500 us after a 25% step load change

## ENVIRONMENTAL SPECIFICATIONS

Operating temperature: -20°C to +70°C  
 Storage temperature: -40°C to +85°C  
 Relative humidity: 5% to 95% non-condensing  
 Derating: Derate from 100% at +50°C linearly to 50% at +70°C, applicable to both convection and forced-air cooling conditions

## FSP150-P35 A SERIES



**RoHS**  
**CE**

## SAFETY STANDARD APPROVAL

**CB**

**IEC 62368-1, IEC 60950-1**

**CULUS**

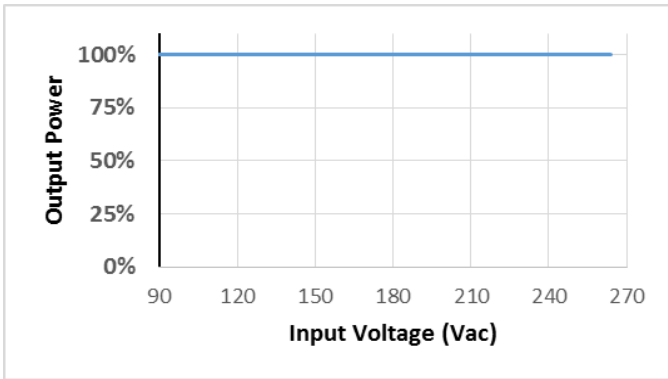
**UL 62368-1,**

**CAN/CSA 22.2 No.62368-1-14**

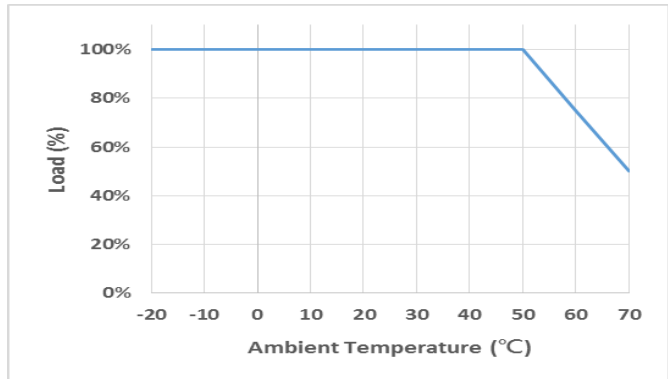
## GENERAL SPECIFICATIONS

Power factor: 0.98 minimum @ 115VAC & 100% load  
 0.9 minimum @ 230VAC & 100% load  
 Efficiency: See rating chart.  
 Power turn-on time: 1.0 Sec maxi.  
 Hold-up time: 20 mS minimum at 115 VAC @ 100W  
 8 mS minimum at 115VAC @ 150W  
 Line regulation:  $\pm 0.5\%$  maximum at full load  
 Inrush current: 45 A @ 115 VAC, at 25°C cold start  
 90 A @ 230 VAC, at 25°C cold start  
 Operating altitude: 5000 meters above sea level  
 Withstand voltage: 3000 VAC from input to output,  
 1500 VAC from input to ground,  
 1500 VAC from output to ground  
 Isolation Resistance: Input to output 100M ohm @ 500Vdc, 25°C  
 MTBF: 400,000 hours mini. at full load at 25°C  
 ambient, calculated per BELL CORE SR-332  
 EMC Performance  
 EN55032: Class B conducted, class B radiated  
 FCC: Class B conducted, class B radiated  
 VCCI: Class B conducted, class B radiated  
 EN61000-3-2: Harmonic distortion, class A and D  
 EN61000-3-3: Line flicker  
 EN61000-4-2: ESD,  $\pm 8$  KV air and  $\pm 4$  KV contact  
 EN61000-4-3: Radiated immunity, 3 V/m  
 EN61000-4-4: Fast transient/burst,  $\pm 1$  KV  
 EN61000-4-5: Surge,  $\pm 1$  KV diff.,  $\pm 2$  KV com  
 EN61000-4-6: Conducted immunity, 3 Vrms  
 EN61000-4-8: Magnetic field immunity, 1 A/m  
 EN61000-4-11: Voltage dip immunity,  
 30% reduction for 500 ms, criteria A  
 >95% reduction for 10 ms, criteria A  
 >95% reduction for 5000 mS, criteria B

**INPUT VOLTAGE DERATING CURVE**



**OUTPUT POWER DERATING CURVE**



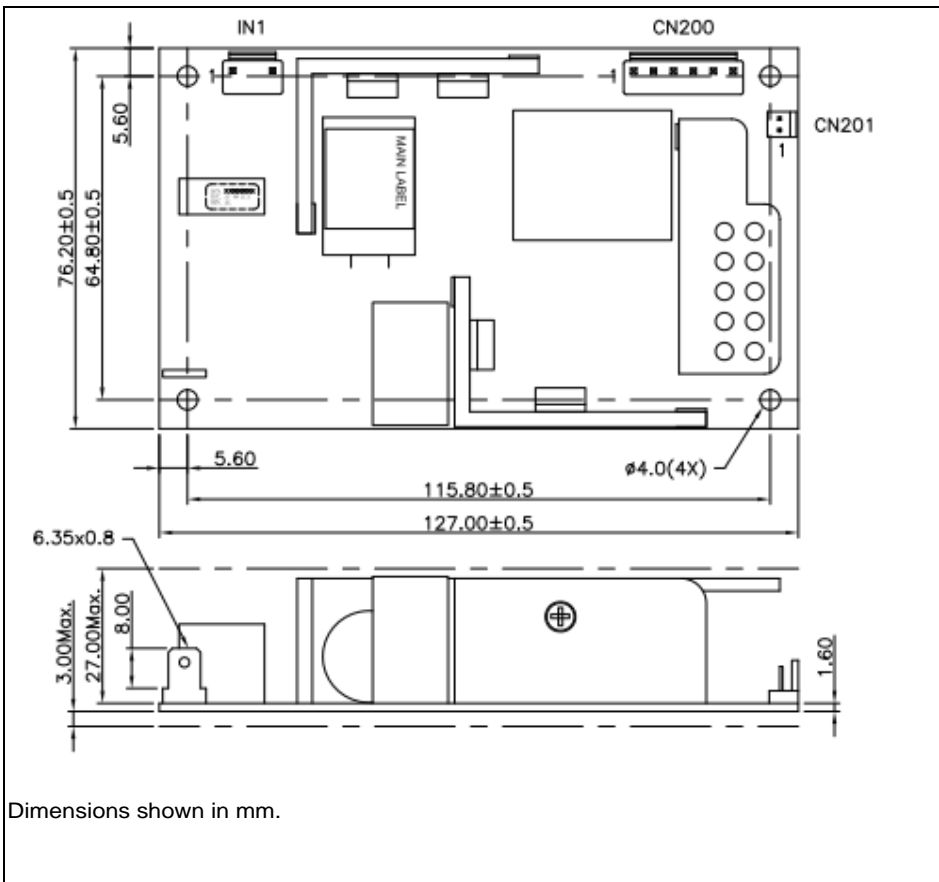
**OUTPUT VOLTAGE/CURRENT RATING CHART**

Model	Output							Efficiency
	V1	Min. Load	Max. Current convection	Max. Current 7 CFM	Load Regulation	Ripple & Noise <sup>(1)</sup>	Max. Power <sup>(2)</sup>	115 / 230 Vac (typical)
FSP150-P35-A12	12 V	0 A	8.34 A	12.5 A	±3%	120 mV	100 W / 150 W	90 / 92%
FSP150-P35-A24	24 V	0 A	4.17 A	6.25 A	±3%	200 mV	100 W / 150 W	89 / 91%
FSP150-P35-A54	54 V	0 A	1.86 A	2.78 A	±3%	300 mV	100 W / 150 W	91 / 92%

**NOTES:**

- Ripple and noise is maximum peak to peak voltage value measured at output within 20 MHz bandwidth, at rated line voltage and output load ranges, and with a 47 µF electrical capacitor in parallel with a 0.1 µF ceramic capacitor across the output.
- The first value of maximum current is at convection cooling. The second value is with 7 CFM forced air provided by user.

**MECHANICAL SPECIFICATIONS**



Dimensions shown in mm.

**1. Input connector (CN1):**

Pin No.	Function	Wafer
1	Neutral	J.S.T B2P3-VH or equivalent
2		
3	Line	

Matting connector:

J.S.T housing VHR-3N,  
Crimp PIN SVH-21T-P1.1 or equivalent.

**2. Output connector (CN200):**

Pin No.	Function	Wafer
1, 2, 3	+V	J.S.T B6P-VH or equivalent
4, 5, 6	Return	

Matting connector:

J.S.T housing VHR-6N,  
Crimp PIN SVH-41T-P1.1 or equivalent.

**3. Fan connector (CN201):**

Pin	Function	Wafer
1	+12V	Molex 22-27-2021 or equivalent
2	Return	

Matting connector:

Molex housing 22-01-2026,  
Crimp PIN 08-50-0113

**4. Ground pad: 8 x 6.35 x 0.8 mm**

**Weight: 220 grams (0.485 lbs.) approx.**